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| EXAMINER |
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DICKERSON, CHAD S

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2625

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ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|                              |                                      |                                      |  |
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| <b>Office Action Summary</b> | <b>Application No.</b><br>10/801,189 | <b>Applicant(s)</b><br>NEWELL ET AL. |  |
|                              | <b>Examiner</b><br>CHAD DICKERSON    | <b>Art Unit</b><br>2625              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-8,10 and 14-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5-8, 10 and 14-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. Applicant's Appeal Brief was received on 9/1/05, and has been entered and made of record. Currently, **claims 1-3, 5-8, 10 and 14-26** are pending.

### *Response to Arguments*

2. In view of the appeal brief filed on 3/15/05, PROSECUTION IS HEREBY REOPENED.

New grounds of rejections are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

3. Applicant's arguments, see page 6 of the Appeal Brief, filed 10/10/2009, with respect to claim objections have been fully considered and are persuasive. The claim objections of claims 23-25 has been withdrawn.

4. Applicant's arguments, see pages 12 and 13 of the Appeal brief, filed 10/10/2009, with respect to the rejection(s) of re-numbered claim(s) 24-26 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Mathieson '651 for claim 24, Ferlitsch '106 for claim 25 and Shah '167 for claim 26. The Examiner believes that the rest of the claims are disclosed by the reference of Pavlovic '279, Kageyama '117 and Ferlitsch '442. On page 9 of the filed brief, the Applicant argued that the interpretation of the Pavlovic reference operating with only two jobs in the buffer that would forego the need to reorder jobs since these jobs are not processed in random order is counter to the disclosure of Pavlovic. The Examiner respectfully disagrees with this assertion.

The context of the Examiner's interpretation deals with two jobs being combined together that are of the same processing format (i.e. PCL or Postscript). As stated in Pavlovic, the system is able to process multiple formats. However, if one processor for each format is used, the format only processes one job at a time. For example, in Pavlovic, if a user submits a job with multiple jobs or files of the same format, the processor rendering this format processes these files sequentially<sup>1</sup>. The Applicant claimed that the Examiner's interpretation mischaracterized Pavlovic's invention. However, mentioned in Pavlovic, the invention even states having a job comprised of many jobs of the same format<sup>2</sup>. Whether that involves two files or more, the system still may have just one processor to process a certain format and according to Pavlovic,

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<sup>1</sup> See Pavlovic '379 at col. 7, ll. 11 – col. 8, ll. 66 and figure 3.

these files will be processed in an order from the first file to the last file. With processing occurring in this order, there is no need for re-ordering any of the jobs since the jobs are already processed and output in the order they are received. Moreover, with the jobs being the same format, the system then processes another job after the previous job is completed in processing. Therefore, the Examiner believes that the characterization of Pavlovic is correct in the previous Office Action and the independent claims are disclosed.

Regarding the independent determination of the several orders, the Examiner still believes this is disclosed as well. The Examiner will reiterate an argument previously posed in a past Office Action that is believed to pertain to the above assertion. As disclosed in column 7, lines 28-50, the job description is received by the system control (108). The system control (108) is used to set up the relationship between the decomposition facility y (110), buffer manager (120) and the marker (112). The system control (108) is used to evaluate, or analyze, the job description in order to identify specific tasks to be performed in the print system for yielding the desired output. For example, in column 8, lines 1-13, the system control (108) sends marker tasks to the marker (112) in order to communicate what data the marker should request from the buffer manager and what order to request the data. This is a clear example of the system control evaluating the information that characterizes the job, or job description, and the system control independently determining the manner in which to have print data transferred to the marker (112). Since transferring the printing information to the

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<sup>2</sup> Id. at col. 10, ll. 15-32.

marker is the same as transferring the print information to the print hardware because the marker is the software component controlling the printing hardware for outputting the job (see col. 4, ll. 1-17), the function of independently determining a transfer order of the media sheets is performed. Similar to Applicant's invention, the system control, analogous to the imaging component, is used to evaluate a job description and determine a printing system function, which is similar to Applicant's invention.

Also, the Examiner considered the finishing portion of the system as the output portion since the delivering of physical media sheets are determined by the delivery order. The Pavlovic reference discloses having its system control (108) evaluate the job description in order to determine where the printed sheets will be delivered to. In other words, the Pavlovic reference determines based on the job description what tray to deliver printed sheets (see col. 6, ll. 4-40). The Applicant argued that the delivery order was tied to the transfer order. The Examiner interprets this as the determination by the system controller (108) to deliver sheets to a certain tray is affected by the decision to transfer a job in either a low-load or heavy load conditions (see how the conditions of jobs change the manner they are transferred col. 10, ll. 15-32). The Examiner sees no connection of how the media sheets being delivered to a certain tray has anything to do with the manner in which print information is delivered to the marker and printing hardware.

Lastly, since the decision to pick a certain media sheet, transfer a job in different manners to the marker depending on the load conditions and to place a printed job on a certain output tray is based solely on the evaluation of the job description by the system

control (108) and these determinations do not have any affect any of the above determinations, the Examiner believes that the pick, transfer and delivery order are all performed independently of one another. Therefore, with the above explanation, the Examiner still believes that the Pavlovic reference reads on all of the claim features in the independent claims.

Regarding the new ground(s) of rejection in claim 24, the Examiner has decided to apply the Mathieson '651 reference. In renumbered claim 24, the Pavlovic system discloses independently determining the transfer order and delivery order based on the size of the print job in terms of the memory space required to store the job. For example, during low load situations where a job is comprised of tasks of the same PDL and there are no other jobs to be printed, the system changes the transfer order of the jobs from the decomposition facility (110) to the common image pool (130) directly to the printer hardware (114). However, in high load situations or when files of different formats are to be combined into a single job, the image data is transferred to the spool (116) from the buffer manager (120) until it is requested by the printer hardware for output. The order of transfer from the decomposition facility is different based on the memory load jobs are exerting on the system. Also, the order in which the jobs are delivered to the printing hardware is different based on this same factor. Therefore, the Examiner believes that the transfer and delivery order are both determined by the amount of memory space jobs require to be stored in the system<sup>3</sup>. Like the Pavlovic reference, the Mathieson reference involves network printing and takes into account the

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<sup>3</sup> Id. at col. 10, ll. 3-42.

memory load on the system to determine where and when to output information (same field of endeavor). However, the Mathieson '651 reference discloses the feature of changing the order of jobs being processed in the print job queue based on the memory space required for the job of a certain size to be processed<sup>4</sup>. The reference selects a certain job to process based on the amount of space required in the printer memory to process the job. If there is not enough space in the queue required to process the job, the system may re-route another job to another storage location. The printer can then select the job originally presented to the system with a certain size that is now able to be stored in the print queue since the job size space required in order to perform the job is now available. In view of the above explanation, the Pavlovic reference combined with a Mathieson reference is believed to disclose the feature above.

Regarding the new ground(s) of rejection in claim 25, the Examiner believes that the reference of Pavlovic in combination with the Ferlitsch '106 discloses the above claim limitation. The Pavlovic reference discloses the feature of determining a pick order based on a color scheme through the job specification being used to designate a color scheme of a sheet of paper to use. The system uses this characteristic and picks a certain sheet of paper based on this instruction. Like the Pavlovic reference, Ferlitsch '106 discloses converting a PDL into a raster image and outputting a print job (same field of endeavor). However, in the Ferlitsch reference, the system discloses transferring jobs based on the color scheme of the page to a Hybrid driver and to a color or black and white printer. The color scheme of the pages will determine which pages

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<sup>4</sup> See Mathieson '651 at ¶ [0032]-[0037].



will be transferred to a certain printer (i.e. color or B/W) and in what order these pages will be transferred to the certain printer<sup>5</sup>. The system of Ferlitsch '106 also discloses the order of delivering pages to an output portion of the output devices. When a mixed job is output, the system may determine that the color pages need to be delivered to the black and white printer after these pages are output. However, if the job is simply a color print, the job specification describing the finishing portion may have a color print output in a certain tray of the color printer. In both cases, depending on the color scheme of the job, a different order is devised for how the jobs are delivered to the output portion of the output devices<sup>6</sup>. Therefore, with the above combination, the Examiner believes the above claim features are performed.

Regarding the new ground(s) of rejection in claim 26, the Examiner believes that the feature of the transfer and delivery order independently determined based on the image complexity is performed by the reference of Pavlovic. The Pavlovic reference transfers a job based the time it takes to process the image complexity of the job. The more or less complex the file in the job, the longer or shorter the period that the job will be transferred to the next module in the printing process. Through the processing of the complex job, the system determines to transfer a certain job before another job because one is less complex than another<sup>7</sup>. Moreover, if the system works on simple job, which is less complex than a multiple file job, the system delivers this job and other jobs to the printing hardware as soon as the jobs are decomposed. However, in a more complex job that involves a multiple file job, the printer hardware requests the job in a different

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<sup>5</sup> See Ferlitsch '106 at ¶ [0018]-[0027] and [0030]-[0052].

order than the simple jobs<sup>8</sup>. The Shah '167 reference, like the Pavlovic reference, involves network printing and rasterizing data when it is received at the printer (same field of endeavor). However, the Shah reference discloses a printer that looks at print jobs and organizes the jobs in a simple queue and a complex queue. The printer then picks or selects the jobs in the simple queue to perform printing on these jobs first<sup>9</sup>. With using the complexity of a document, the printer picks a certain job to complete and orders the jobs in the queue in the manner that they will be output. Therefore, the combination of the Pavlovic reference with the Shah reference discloses the limitations in claim 26.

Therefore, with the above explanations, the Examiner believes that the claim limitations mentioned above are disclosed with the combined references.

### ***Claim Objections***

5. Claim 21 is objected to because of the following informalities:

- It is suggested to change the dependency of claim 21 to -- claim 20 -- instead of "claim 19" in order to give the phrase "said media" antecedent basis.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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<sup>6</sup> Id. at ¶ [0054]-[0071].

<sup>7</sup> See Pavlovic '379 at col. 8, ll. 14-53.

<sup>8</sup> Id. at col. 10, ll. 15-32.

<sup>9</sup> See Shah '167 at col. 3, ll. 24-58.

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1, 3, 5-8, 10, 14-18 and 22-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. The term "*to increase efficiency and adaptability of processing each batch*" in claims 1, 8 and 15 is a relative term which renders the claim indefinite. The term "*to increase efficiency and adaptability of processing each batch*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. As stated in the above arguments, the scope of claim language cannot depend solely on the subjective opinions of individuals practicing the invention. In modern printing system design, the Examiner believes that about every invention is created with intent to have units and processes that are used to increase efficiency and adaptability to process print jobs. As is the case of Pavlovic applied below. How would one measure that the system in question increases the use of time in an effective manner and the adaptability of processing in the system? The dependent claims are also rejected because of their dependency on a rejected independent claim.

### ***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 8, 10, 14-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Pavlovic '379 (USP 5715379).

Re claim 8: Pavlovic '379 discloses a method of processing a print batch in a print device, comprising:

storing on a memory storage device of a formatter a print batch that includes a plurality of print jobs (i.e. Pavlovic '379 discloses the spool (106) being used to store the print job's PDL, which can include the actual image data to be printed and the job description. The files used to produce an image can be considered as a job since these separate files in different formats correspond to the formation of an individual image per file. In the conventional system, the decomposed print jobs can be stored on the buffer on the decomposer until it is requested by other parts of the printing system. Used in the system of Pavlovic '379 is common image pools or buffer managers that can store more information to free up the decomposer; see figs. 1-3, col. 2, line 46—col. 3, line 67 and col. 7, line 10 – col. 10, line 42);

evaluating by an imaging component characteristics of said print batch to independently determine a pick order to increase efficiency of picking media sheets (i.e. in the system, the system control evaluates, or interprets that specification of the job description and determines the type of media picked, or chosen, for the image to be printed on. The Pavlovic reference is used to increase the efficiency of the system in a manner by processing multiple jobs as if they were all one job and increasing

adaptability of the system by processing multiple format jobs as one job; see figs. 1-3; col. 2, line 46 — col. 4, line 61);

picking by a print engine said media sheets according to said pick order (i.e. in accordance with the job description, the system control chooses the tray that contains the specified paper to be used in the feeding process for imaging. The function of picking from different types of sheets to be used for a print job is performed; see figs. 1-3; col. 2, line 46 — col. 4, line 61 and col. 6, ll. 4-55);

evaluating by the imaging component said characteristics to independently determine a transfer order of said print jobs to increase efficiency of transferring said print jobs from said formatter to an imaging component (i.e. in the system, the decomposition facility (110) is considered to be the formatter since it is used to format incoming PDL into a uncompressed bitmap. The system control evaluates the job description and determines which jobs from the buffer manager or the common image pool is to be transferred to the printer hardware (114). This decision of transferring the jobs to the printer hardware is based on the stream handles and the job description that affects the stream handles. In the conventional system, the decomposer is used to store the data that is RIPed and then transfer that information to the image forming part of the printing system. The system evaluates the job description and the data stream of the job information and decides based on these characteristics what job data is output to the printing hardware. The Pavlovic reference is used to increase the efficiency of the system in a manner by processing multiple jobs as if they were all one job and

increasing adaptability of the system by processing multiple format jobs as one job; see figs. 1-3; col. 6, ll. 4-55 and col. 7, line 10 – col. 10, line 42);

transferring said print jobs from said formatter to said imaging component based on said transfer order (i.e. In the conventional system, the decomposer is used to store the data that is RIPed and then transfer that information to the image forming part of the printing system. This performs the feature of transferring the jobs from the formatter to the imaging component in the printing system. In the overall invention, the jobs are transferred from the buffer manager or the common image pool to the printer hardware based on the transfer order decided by the system control using the stream handles concept and the information from the job description. The system evaluates the job description and the data stream of the job information and decides based on these characteristics what job data is output to the printing hardware. Depending on the load conditions of the print job, the jobs are transferred to the marker in a different manner; see figs. 1-3; col. 6, ll. 4-55 and col. 7, line 10 – col. 10, line 42);

forming images by said print engine corresponding to said print jobs on media sheets (i.e. the printer hardware is used to form images that correspond to the print jobs on the sheets designated by the job description; see figs. 1-3; col. 2, line 46 — col. 4, line 61);

evaluating by the imaging component said characteristics to independently determine a delivery order of said media sheets to increase efficiency of delivering said media sheets (i.e. in the system, when the job description is evaluated, or interpreted,

by the system control, the order of delivery of the printed images from the printer to the finisher in the system is determined using the stream handling concept. Whichever stream handle is chosen first is the stream of data that is first printed and finished. However, the document finished is delivered to a certain tray based on the information gained from the job specification, which was evaluated by the system control (108). The Pavlovic reference is used to increase the efficiency of the system in a manner by processing multiple jobs as if they were all one job and increasing adaptability of the system by processing multiple format jobs as one job; see figs. 1-3; col. 6, ll. 4-55 and col. 7, line 10 – col. 10, line 42); and

delivering by said print engine said media sheets to an output portion of said print device based on said delivery order (i.e. in the system, the sheets that are printed are then delivered to the part of the printing system that performs the collation or stapling of the printed sheets; see figs. 1-3; col. 2, line 46 — col. 4, line 61, col. 6, ll. 4-55 and col. 7, line 10 – col. 10, line 42).

Re claim 10: The teachings of Pavlovic '379 are disclosed above.

Pavlovic '379 discloses the method of claim 8, wherein said characteristics comprise an image receiving media type, an image size, an image processing time, or an image forming time (i.e. the job description has the type of media that will receive the image; see figs. 1-3; col. 2, line 46 — col. 4, line 61 and col. 6, ll. 4-55).

Re claim 14: The teachings of Pavlovic '379 are disclosed above.

Pavlovic '379 discloses the method of claim 8, forming said images includes using said imaging component to convert data contained in said print job to commands (i.e. in the system, the marker, is used to take the PDL that makes up the image and the job specification and convert these components of the file into an instruction for the printer hardware; see figs. 1-3; col. 2, line 46 — col. 4, line 61);

conveying said commands to a print engine, and forming said images in response to said commands (i.e. the marker (112) is used to send the instructions of the print file to the printer hardware in order for the printer hardware to accept the instructions and print the image that is described by the instructions; see figs. 1-3; col. 2, line 46 — col. 4, line 61).

Re claim 15: Pavlovic '379 discloses a print device, comprising:

a formatter configured to pool a batch of print data (i.e. in the conventional system, the decomposed print jobs can be stored on the buffer on the decomposer until it is requested by other parts of the printing system. Used in the system of Pavlovic '379 is common image pools or buffer managers that can store more information to free up the decomposer; see figs. 1-3; col. 7, line 10 – col. 10, line 42), wherein said batch includes a plurality of print jobs (i.e. in the system, the files are considered as a print job since these involve forming at least one image per format. The system can provide for a plurality of files in the system; see figs. 1-3; col. 2, line 46 — col. 4, line 61);



a processor having an imaging component residing thereon (i.e. the system controller is used as the processor and the processor performs the feature of the imaging component, which is the evaluation or the interpretation of the job specification. Therefore, the system control performs the feature of the imaging component; see figs. 1-3; col. 2, line 46 — col. 4, line 61), wherein said imaging component is configured to access batch information about said batch, including print media type, image size, image processing time, or image forming time (i.e. the system control accesses the files in the spool (106) and checks the job specification that is related to each file. The job specification is used to help determine functions in relation to the files that are combined into one print job; see figs. 1-3; col. 2, line 46 — col. 4, line 61, col. 6, ll. 4-55 and col. 7, line 10 – col. 10, line 42) and

based on said batch information, to independently determine a pick order for different types of print media to be used for different print jobs in order to increase picking efficiency (i.e. based on the job description, the size or type of paper to be used is picked by the printing system. The paper picked is from the paper trays used to feed print media into the printing system. The Pavlovic reference is used to increase the efficiency of the system in a manner by processing multiple jobs as if they were all one job and increasing adaptability of the system by processing multiple format jobs as one job; see figs. 1-3; col. 2, line 46—col. 3, line 67 and col. 6, ll. 4-55),

independently determine a transfer order for transferring rasterized print job data to said imaging component in order to increase transfer efficiency (i.e. in the system, the different decomposers have different rates of decomposition depending on the

complexity of the image data and other factors. However, the order of the print files being transferred to the printer hardware (114) is based on the stream handles assigned by the buffer manager (120). In the example listed in column 9, since the pages of the formats require stapling, the system determines to first transfer stream handle IV to the printer hardware and to perform this transfer in reverse order to stream handle I. Because of the characteristic of stapling the sheets, the stream handles are called in reverse order. With the stapling function and the different data streams taken into account, the different print jobs are submitted to the printing device in a certain order. In the system, the common image pool is used to store decompressed bitmap images. These images can be given to the printing hardware directly from the common image pool in the order in which they are requested by the marker. Also, since the jobs can have different load conditions, the jobs can be transferred to the marker in different manners as well. The Pavlovic reference is used to increase the efficiency of the system in a manner by processing multiple jobs as if they were all one job and increasing adaptability of the system by processing multiple format jobs as one job; see figs. 1-3; col. 5, ll. 9-col. 6, ll. 55 and col. 7, line 10 – col. 10, line 42), and

independently determine a delivery order of said print jobs in order to increase delivery efficiency (i.e. since the files transferred to the printer hardware are in reverse order, the delivery of the respective files to be printed and finished by the printer hardware and the finisher are also in reverse order. In this case, the job in the last format, Postscript file 2, is printed and stapled first since the pages are stacked face-up and stapled in the correct order with the first job on top of the rest of the finished files.

This process determines when the printed images are to be sent to the finisher part of the printing system. However, the output tray, considered as the output portion, is chosen only based on the evaluation of the job specification. Therefore, the independent determination of delivering sheets to a certain tray is performed by the system control (108). The Pavlovic reference is used to increase the efficiency of the system in a manner by processing multiple jobs as if they were all one job and increasing adaptability of the system by processing multiple format jobs as one job; see figs. 1-3; col. 6, ll. 4-55 and col. 7, line 10 – col. 10, line 42); and

such that the picking order, the transfer order, and the delivery order are each distinct from one another (i.e. since the decision to pick a certain media sheet, transfer a job in different manners to the marker depending on the load conditions and to place a printed job on a certain output tray is based solely on the evaluation of the job description by the system control (108) and these determinations do not have any affect any of the above determinations, the pick, transfer and delivery order are all performed independently of one another; see figs. 1-3; col. 6, ll. 4-55 and col. 7, line 10 – col. 10, line 42); and

a print engine configured to form images on a plurality of media corresponding to said print jobs (i.e. since the printer hardware is used to perform the feature of printing the images on printing sheets in relation to the files in the system, the above feature is performed; see figs. 1-3; col. 2, line 46 — col. 4, line 61).

Re claim 16: The teachings of Pavlovic '379 are disclosed above.

Pavlovic '379 discloses the print device of claim 15, wherein said formatter is configured to perform raster image processing (i.e. the decomposers or decomposition facility (110) is used to decompress data and convert data into a uncompressed bitmap, since the PDL information is converted into the bitmap information to be printed by the printer hardware; see figs. 1-3; col. 4, line 1 – col. 5, line 36).

Re claim 17: The teachings of Pavlovic '379 are disclosed above.

Pavlovic '379 discloses the print device of claim 15, wherein said print engine comprises an inkjet print head (i.e. with the system able to perform printing using an ink-jet marking engine, it is understood that a ink-jet print head would be used with the ink-jet marking engine; see figs. 1-3; col. 4, line 1 – col. 5, line 36).

Re claim 18: The teachings of Pavlovic '379 are disclosed above.

Pavlovic '379 discloses the print device of claim 15, wherein said print engine is configured to pick said media according to said pick order (i.e. in the system, the system control is in the printer system and printer hardware is used to feed the print media from a certain tray when the printer hardware is instructed by the system control; see figs. 1-3; col. 2, line 46 — col. 4, line 61) and to deliver said media according to said delivery order (i.e. since the printer hardware is used to perform the feature of printing the

images on printing sheets and to deliver these images to the finisher part of the printing system to provide finishing capability to the sheets, the above feature is performed; see figs. 1-3; col. 2, line 46 — col. 4, line 61).

Re claim 19: Pavlovic '379 discloses a printing system, comprising:

means for evaluating characteristics of a print batch (i.e. the system control (108) is used to evaluate, or interpret, the job description of the file, considered to be the characteristics, and use this information to determine properties of the file or files in the overall print job; see figs. 1-3; col. 2, line 46 — col. 4, line 61); and

means for independently determining a pick order (i.e. based on the job description, the size and type of paper to be used is picked by the printing system. The paper picked is from the paper trays used to feed print media into the printing system; see figs. 1-3; col. 2, line 46—col. 3, line 67 and col. 6, ll. 4-55),

independently determining a transfer order (i.e. in the system, the different decomposers have different rates of decomposition depending on the complexity of the image data and other factors. However, the order of the print files being transferred to the printer hardware (114) is based on the stream handles assigned by the buffer manager (120). In the example listed in column 9, since the pages of the formats require stapling, the system determines to first transfer stream handle IV to the printer hardware and to perform this transfer in reverse order to stream handle I. Because of the characteristic of stapling the sheets, the stream handles are called in reverse order.

Also, since the jobs can have different load conditions, the jobs can be transferred to the marker in different manners as well, thus changing the transfer order; see figs. 1-3; col. 6, ll. 4-55 and col. 7, line 10 – col. 10, line 42), and

independently determining a delivery order (i.e. since the files transferred to the printer hardware are in reverse order, the delivery of the respective files to be printed and finished by the printer hardware and the finisher are also in reverse order. In this case, the job in the last format, Postscript file 2, is printed and stapled first since the pages are stacked face-up and stapled in the correct order with the first job on top of the rest of the finished files. This process determines when the printed images are to be sent to the finisher part of the printing system. However, the output tray, considered as the output portion, is chosen only based on the evaluation of the job specification. Therefore, the independent determination of delivering sheets to a certain tray is performed by the system control (108); see figs. 1-3; col. 6, ll. 4-55 and col. 7, line 10 – col. 10, line 42),

based on said characteristics (i.e. these functions are all dependent on the job description and data stream content sent to the printing system; see figs. 1-3; col. 2, line 46—col. 3, line 67),

wherein the picking order, the transfer order, and the delivery order are either distinct from one another or the same as one another (i.e. since the decision to pick a certain media sheet, transfer a job in different manners to the marker depending on the load conditions and to place a printed job on a certain output tray is based solely on the

evaluation of the job description by the system control (108) and these determinations do not have any affect any of the above determinations, the pick, transfer and delivery order are all performed independently of one another; see figs. 1-3; col. 6, ll. 4-55 and col. 7, line 10 – col. 10, line 42).

Re claim 20: The teachings of Pavlovic '379 are disclosed above.

Pavlovic '379 discloses the system of claim 19, and further comprising means for picking media according to said pick order (i.e. once the sheet to use is determined from the system control, the printing system is notified of the tray to feed the paper to be used to feed the media in order to print on the sheet; see figs. 1-3; col. 2, line 46 — col. 4, line 61),

transferring print jobs of said print batch according to said transfer order (i.e. using the stream handles that are designated by the system control to the buffer manager (120), the system transfers the print files from the buffer or pool to the printer hardware for printing according to the order chosen by the system control though the buffer; see figs. 1-3; col. 7, line 10 – col. 10, line 42), and

delivering said media according to said delivery order (i.e. the sheets with the printed images are also delivered to the finishing part of the printing system in the same order as the printing files where sent to the printing hardware for printing; see figs. 1-3; col. 7, line 10 – col. 10, line 42).

Re claim 21: The teachings of Pavlovic '379 are disclosed above.

Pavlovic '379 discloses the system of claim 19, and further comprising means for forming an image on said media (i.e. since the printer hardware is used to perform the feature of printing the images on printing sheets in relation to the files in the system, the above feature is performed; see figs. 1-3; col. 2, line 46 — col. 4, line 61).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1, 3-7 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pavlovic '379 in view of Kageyama '117 (USP 7092117).

Re claim 1: Pavlovic '379 discloses a method of processing a print batch in a print device, comprising:

storing on a memory storage device a plurality of print jobs contained in said print batch (i.e. Pavlovic '379 discloses the spool (106) being used to store the print job's PDL, which can include the actual image data to be printed and the job description. The files used to produce an image can be considered as a job since these separate files in



different formats correspond to the formation of an individual image per file; see figs. 1-3; col. 2, line 46—col. 3, line 67);

evaluating by a processor residing on said print device said characteristics of said print jobs (i.e. the system control (108) is used to evaluate, or interpret, the job description of the file, considered to be the characteristics, and use this information to determine properties of the file or files in the overall print job; see figs. 1-3; col. 2, line 46 — col. 4, line 61 and col. 6, ll. 4-55); and

independently determining by the processor a pick order (i.e. based on the job description, the size and type of paper to be used is picked by the printing system. The paper picked is from the paper trays used to feed print media into the printing system; see figs. 1-3; col. 2, line 46—col. 3, line 67 and col. 6, ll. 4-55),

independently determining a transfer order (i.e. in the system, the different decomposers have different rates of decomposition depending on the complexity of the image data and other factors. However, the order of the print files being transferred to the printer hardware (114) is based on the stream handles assigned by the buffer manager (120). In the example listed in column 9, since the pages of the formats require stapling, the system determines to first transfer stream handle IV to the printer hardware and to perform this transfer in reverse order to stream handle I. Because of the characteristic of stapling the sheets and the stream handles, the pages to be stapled are called in reverse order. Also, since the jobs can have different load conditions, the

jobs can be transferred to the marker in different manners as well, thus changing the transfer order; see figs. 1-3; col. 7, line 10 – col. 10, line 42), and

independently determining a delivery order (i.e. since the files transferred to the printer hardware are in reverse order, the delivery of the respective files to be printed and finished by the printer hardware and the finisher are also in reverse order. In this case, the job in the last format, Postscript file 2, is printed and stapled first since the pages are stacked face-up and stapled in the correct order with the first job on top of the rest of the finished files. This process determines when the printed images are to be sent to the finisher part of the printing system. However, the output tray, considered as the output portion, is chosen only based on the evaluation of the job specification. Therefore, the independent determination of delivering sheets to a certain tray is performed by the system control (108); see figs. 1-3; col. 7, line 10 – col. 10, line 42)

based, at least in part, on said characteristics to increase efficiency and adaptability of processing each print batch (i.e. these functions are all dependent on the job description sent to the printing system. The Pavlovic reference is used to increase the efficiency of the system in a manner by processing multiple jobs as if they were all one job and increasing adaptability of the system by processing multiple format jobs as one job; see figs. 1-3; col. 2, line 46—col. 3, line 67),

such that the picking order, the transfer order, and the delivery order are each distinct from one another for a print engine configured to form images on a plurality of media corresponding to said print jobs(i.e. since the decision to pick a certain media

sheet, transfer a job in different manners to the marker depending on the load conditions and to place a printed job on a certain output tray is based solely on the evaluation of the job description by the system control (108) and these determinations do not have any affect any of the above determinations, the pick, transfer and delivery order are all performed independently of one another; see figs. 1-3; col. 6, ll. 4-55 and col. 7, line 10 – col. 10, line 42); and

outputting said plurality of print jobs without having to reorder the print jobs within the print batch (i.e. if the system were to operate in a case of the system only containing two jobs, Postscript file 1 and Postscript file 2, these jobs could be placed in the buffer in the order in which they are to be received. Based on figure 3, one can determine that based on the way the files are placed on the buffer that the information in Postscript file 1 was decomposed before Postscript file 2 seeing as there is one postscript decomposer. Since the system working in this manner contains the buffer only containing two jobs, Postscript files 1 and 2, and file 1 is decomposed before file 2, then the jobs will be placed on the buffer in that same manner. In this case, there is no reordering of the jobs since the jobs are no longer generated in random order, but the second job is processed after the first job is processed; see fig. 3, col. 7, ll. 11 – col. 8, ll. 66).

However, Pavlovic '379 fails to specifically teach storing characteristics of a plurality of print jobs.

However, this is well known in the art as evidenced by Kageyama '117. Kageyama '117 discloses storing characteristics of a plurality of print jobs (i.e. the

invention of Kageyama is similar to the function of Pavlovic since both inventions involve sending a print job over to a printer for printing (same field of endeavor). However, shown in figure 5 are job tickets, which have the characteristics of a certain job and these are stored with their respective job in the archive within the printer; see fig. 5; col. 5, line 7 – col. 6, line 5).

Therefore, in view of Kageyama '117, it would have been obvious to one of ordinary skill at the time the invention was made to have the method step of storing characteristics of a plurality of print jobs in order to store a job ticket in the archive for a document (as stated in Kageyama '117 col. 5, lines 7-65).

Re claim 3: The teachings of Pavlovic '379 in view of Kageyama '117 are disclosed above.

Pavlovic '379 discloses the method of claim 1, wherein said characteristics comprise an image receiving media type (i.e. the job description has the type of media that will receive the image; see figs. 1-3; col. 2, line 46 — col. 4, line 61), an image size, an image processing time, or an image forming time.

Re claim 5: The teachings of Pavlovic '379 in view of Kageyama '117 are disclosed above.

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Pavlovic '379 discloses the method of claim 4, wherein said processor comprises an imaging component (i.e. in the printing system, the printer hardware (114) is considered as the imaging component since it prints the image on the sheet; see figs. 1-3; col. 2, line 46 — col. 4, line 61).

Re claim 6: The teachings of Pavlovic '379 in view of Kageyama '117 are disclosed above.

Pavlovic '379 discloses the method of claim 1, further comprising forming at least one image corresponding to each of said print jobs on an image receiving media (i.e. in the system, there is at least one image that corresponds to each format in the files that are being printed. These images are printed on a certain type of sheet that is described in the job description part of the files sent to the printer system; see figs. 1-3; col. 2, line 46 — col. 4, line 61).

Re claim 7: The teachings of Pavlovic '379 in view of Kageyama '117 are disclosed above.

Pavlovic '379 discloses the method of claim 6, wherein said images are formed according to said delivery order (i.e. the images in the system are formed due to the order in which the stream handles are chosen by the system. The order of the images being formed is based on the order in which the stream handles are picked and the

delivery of the print jobs to the printer hardware is the same as the delivery to the finisher; see figs. 1-3; col. 7, line 10 – col. 10, line 42).

Re Claim 22: The teachings of Pavlovic '379 in view of Kageyama '117 are disclosed above.

Pavlovic '379 discloses the method of claim 1, wherein independently determining transfer order is based on image complexity, image size, or data transfer time (i.e. in the system, the transfer order of the image data from the decomposer is based on the complexity of the image data; see col. 8, lines 29-53).

13. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pavlovic '379 in view of Ferlitsch '442 (US Pub No 2005/0102442).

Re Claim 23: The teachings of Pavlovic '379 in view of Kageyama '117 are disclosed above.

Pavlovic '379 discloses the method of claim 1, wherein independently determining pick order (i.e. based on the job description, the size and type of paper to be used is picked by the printing system. The paper picked is from the paper trays used to feed print media into the printing system; see figs. 1-3; col. 2, line 46—col. 3, line 67 and col. 6, ll. 4-55).

However, Pavlovic '379 fails to specifically teach wherein independently determining pick order is based on expected pick time.

However, this is well known in the art as evidenced by Ferlitsch '442. Ferlitsch '442 discloses wherein independently determining pick order is based on expected pick time (i.e. the system of Ferlitsch is similar to the invention of Pavlovic since it takes the image complexity into account when outputting an image (same field of endeavor). However, as disclosed in the system, the media sheets chosen for specific jobs are based on the time of day when a document is to be printed since this is the time when the media sheet is picked, based on the job's characteristics, and the print job is executed on the printing system; see paragraphs [0067]-[0077]).

Therefore, in view of Ferlitsch '442, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of wherein independently determining pick order is based on expected pick time, incorporated in the device of Pavlovic '379, in order to have an administrative policy that is responsive to the document complexity (as stated in Ferlitsch '442 paragraph [0068]).

14. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pavlovic '379, as modified by the features of Kageyama '117, as applied to claim 1 above, and further in view of Mathieson '651 (US PUB 2003/0227651).

Re Claim 24: The teachings of Pavlovic '379 in view of Kageyama '117 are disclosed above.

Pavlovic '379 discloses the method of claim 1, wherein independently determining transfer order, and delivery order is based on size of the print job in terms of memory

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space required (i.e. in the system of Pavlovic, the rate of the decomposers is based on the amount of memory space the actual job contains. The smaller the memory space the complexity of the job encompasses, the faster the job is processed, but the larger the memory space is based on a more complex document, the slower the system can process the job or jobs; see col. 8, lines 29-53).

However, Pavlovic '379 fails to specifically teach determining pick order is based on size of the print job in terms of memory space required.

However, this is well known in the art as evidenced by Mathieson '651. Mathieson '651 discloses determining pick order is based on size of the print job in terms of memory space required (i.e. Like the Pavlovic reference, the Mathieson reference involves network printing and takes into account the memory load on the system to determine where and when to output information (same field of endeavor). However, the Mathieson '651 reference discloses the feature of changing the order of jobs being processed in the print job queue based on the memory space required for the job of a certain size to be processed. The reference selects a certain job to process based on the amount of space required in the printer memory to process the job. If there is not enough space in the queue required to process the job, the system may re-route another job to another storage location. The printer can then select the job originally presented to the system with a certain size that is now able to be stored in the print queue since the job size space required in order to perform the job is now available; See ¶ [0032]-[0037]).



Therefore, in view of Mathieson '651, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of determining pick order is based on size of the print job in terms of memory space required, incorporated in the device of Pavlovic '379, in order to manage jobs in an efficient manner that are competing for the same memory resources (as stated in Mathieson '651 ¶ [0001]-[0003]).

15. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pavlovic '379, as modified by the features of Kageyama '117, as applied to claim 1 above, and further in view of Ferlitsch '106 (US PUB 2004/0184106).

Re Claim 25: The teachings of Pavlovic '379 in view of Kageyama '117 are disclosed above.

Pavlovic '379 discloses the method of claim 1, wherein independently determining pick order, transfer order, and delivery order is based on color scheme (i.e. in the system, the system determines the pick order based on the color scheme of the paper used for the printing process; see col. 6, ll. 4-40).

However, Pavlovic '379 fails to specifically teach wherein independently determining transfer order, and delivery order is based on color scheme.

However, this is well known in the art as evidenced by Ferlitsch '106. Ferlitsch '106 discloses wherein independently determining transfer order, and delivery order is based on color scheme (i.e. Like the Pavlovic reference, Ferlitsch '106 discloses

converting a PDL into a raster image and outputting a print job (same field of endeavor). However, in the Ferlitsch reference, the system discloses transferring jobs based on the color scheme of the page to a Hybrid driver and to a color or black and white printer. The color scheme of the pages will determine which pages will be transferred to a certain printer (i.e. color or B/W) and in what order these pages will be transferred to the certain printer. The system of Ferlitsch '106 also discloses the order of delivering pages to an output portion of the output devices. When a mixed job is output, the system may determine that the color pages need to be delivered to the black and white printer after these pages are output. However, if the job is simply a color print, the job specification describing the finishing portion may have a color print output in a certain tray of the color printer. In both cases, depending on the color scheme of the job, a different order is devised for how the jobs are delivered to the output portion of the output devices; See ¶ [0018]-[0027], [0030]-[0052] and [0054]-[0071]).

Therefore, in view of Ferlitsch '106, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of wherein independently determining transfer order, and delivery order is based on color scheme, incorporated in the device of Pavlovic '379, in order to process pages based on the sheets being color or black and white (as stated in Ferlitsch '106 ¶ [0002]).

16. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pavlovic '379, as modified by the features of Kageyama '117, as applied to claim 1 above, and further in view of Shah '167 (USP 6618167).

Re Claim 26: The teachings of Pavlovic '379 in view of Kageyama '117 are disclosed above.

Pavlovic '379 discloses the method of claim 1, wherein independently determining pick order, transfer order, and delivery order is based on image complexity of the print jobs in the print batch (i.e. in the system, the determined orders of the image data is based on the complexity of the image data since the formats and specific pages are taken into consideration when outputting the document; see col. 8, lines 29-53).

However, Pavlovic '379 fails to specifically teach wherein independently determining pick order is based on image complexity of the print jobs in the print batch.

However, this is well known in the art as evidenced by Shah '167. Shah '167 discloses wherein independently determining pick order is based on image complexity of the print jobs in the print batch (i.e. the Shah '167 reference, like the Pavlovic reference, involves network printing and rasterizing data when it is received at the printer (same field of endeavor). However, the Shah reference discloses a printer that looks at print jobs and organizes in a simple queue and a complex queue. The printer then picks or selects the jobs in the simple queue to perform printing on these jobs first. With using the complexity of a document, the printer picks a certain job to complete and orders the jobs in the queue in the manner that they will be output; see col. 3, ll. 24-58).

Therefore, in view of Shah '167, it would have been obvious to one of ordinary skill at the time the invention was made to have the features of wherein independently determining pick order is based on image complexity of the print jobs in the print batch,

incorporated in the device of Pavlovic '379, in order to have a printer look at the complexity of a job and pick certain jobs to output in a certain order (as stated in Shah '167 at col. 3, ll. 46-58).

### ***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

18. Shiohara '754 (US Pat No 6822754) discloses a system where the information related to the print job such as the type of page used for recording, the type of printing (color or monochrome) and other attribute information that is considered when choosing where to transfer print data information to a certain printer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHAD DICKERSON whose telephone number is (571)270-1351. The examiner can normally be reached on 9:30-6:00pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler Haskins can be reached on (571) 272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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